VILLAGE OF NISSEQUOGUE

Open Space Analysis

Town of Smithtown.
County of Suffolk, N.Y.

Suffolk County Planning Department

VILLAGE OF NISSEQUOGUE

OPEN SPACE ANALYSIS

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Suffolk County Planning Department
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INTRODUCTION

In mid 1984 the Village Board of Trustees requested that the Suffolk County Planning Commission conduct a planning study of the Village that addresses open space and development issues within Nissequogue. The preparation of base maps and field surveys were done in the fall and the environmental and regulatory data completed in the winter. The final product is designed to provide the Village with data that can be used as background for any improvement project or aid application.

The developmental constraints information should be used by the Planning Board to review the subdivision plats and building site plans that will continue to be filed with the Village. Some of the present subdivision and development practices have led to operational or environmental problems. The data presented herewith should encourage good design and siting procedures that minimize the impact of further development on the aesthetic quality of the Village.

DEMOGRAPHIC DATA

The recent population growth rate of the Village is greater than either that of the Town of Smithtown or Suffolk County. In the last four years, the town has experienced more of the aging process and a related reduction in family size which has led to an overall loss of population, while the Village has been accommodating significant new housing activity. Table 1 summarizes the current trends.

Table 1 - Population Change 1970-84

	Population			Change 1970-1980		Change 1980-1984	
	1970	1980	1984	#	%	#	%
Nissequogue Village	1,120	1,462	1,566	342	30.5	104	1.7
Town of Smithtown	114,657	116,663	116,196	2,006	1.7	-467	- .4
Suffolk County	1,127,030	1,284,231	1,306,559	157,201	13.9	22,328	1.7

Source: U. S. Census, 1980
LILCO estimates, 1984

The racial mix of the Village generally follows the pattern in the entire Town of Smithtown. Table 2 indicates the breakdown from the 1980 census. The Hispanic total is included in all racial groups and cannot be accurately subdivided by racial category.

Table 2 - Race and Spanish Origin, 1980

	Total	White	Black	Indian	Asian	Other	Hispanic
Nissequogue Village	1,462	1,438	1	-	11	12	17
		98.4	.1	-	.8	.8	1.2
Town of Smithtown	116,663	114,476	786	64	922	415	2,160
		98.1	.7	.1	.8	.4	1.9
Suffolk County	1,284,231	1,185,109	71,741	1,966	10,297	15,118	58,689
		92.3	5.6	.2	.8	1.2	4.6

Source: U. S. Census, 1980

Table 3 summarizes the labor force and occupation data for the village, town and county. The occupational data indicates that the village has more than half of its work force engaged in managerial or professional jobs. This figure is more than double the county proportion and almost twice the share recorded in the town.

Table 3 - Employment - 1980

		Occupation					Labor Force Status		
		Managerial Professional	Technical, Sales, Clerical	Service	Farming	Blue Collar	Total Employed	Unemployed	Not in Labor Force
Nissequogue Village	#	339	147	48	11	62	607	35	416
	%	55.8	24.2	7.9	1.8	10.2		5.5	39.3
Town of Smithtown	#	15,547	17,152	6,854	365	10,352	50,270	2,495	32,558
	%	30.9	34.1	13.6	.7	20.6		4.7	38.2
Suffolk County	#	138,625	173,896	71,419	7,350	147,261	538,551	35,199	361,005
	%	25.7	32.3	13.3	1.4	27.3		6.1	38.6

Source: U. S. Census, 1980

Table 4 compares some of the general socio-economic data for the village with the town and country. Income and educational levels in the village are considerably higher while poverty levels, household sizes and age are similar to the town.

Table 4 - Socio-Economic Data - 1980

	Median Age	Average Household Size	Persons in Group Quarters	Median Family Income	Persons Below Poverty Level #	Persons Below Poverty Level %	Median School Years Completed
Nissequogue Village	32.0	3.47	-	46,093	56	3.8	14.4
Town of Smithtown	31.1	3.53	3,795	28,813	3,824	3.9	12.8
Suffolk County	29.9	3.25	30,380	24,195	69,094	6.6	12.6

Source: U. S. Census, 1980

The housing in the village is predominantly year-round single family of very high value. Table 5 highlights the major housing statistics.

Table 5 - Housing - 1980

		Housing Units in Structure					
		Total	1	2	3 & 4	Five or More	Mobile Home
Nissequogue Village	#	440	410	14	3	13	-
	%		93.2	3.2	.7	3.0	-
Town of Smithtown	#	32,630	29,297	937	352	2,024	20
	%		89.8	2.9	1.1	6.2	.1
Suffolk County	#	405,667	339,508	23,733	8,985	30,190	3,251
	%		83.7	5.9	2.2	7.4	.8

	Other Housing Characteristics						
	Total Units (All Types)	Seasonal	% Seasonal	Occupied	Owner Occupied	% Owner Occupied	Median Value
Nissequogue Village	454	22	4.8	421	367	87.2	125,943
Town of Smithtown	32,781	262	.8	31,986	27,903	87.2	57,165
Suffolk County	431,722	31,487	7.3	385,719	308,006	79.9	45,614

Source: U.S. Census, 1980

The seasonal housing represents a higher percent than exists in the town and the proportion of units that is rented is the same as the town.

NATURAL RESOURCES

Wetlands

A wetlands inventory map was prepared to identify significant tidal and freshwater wetlands. The information is shown on Map No. 1. The source of the wetlands information is the New York State Tidal Wetlands Maps. The majority of the wetlands are in the saltwater wetlands category with minor freshwater wetlands.

The saltwater wetlands are comprised of two vegetation types in this area:

- IM Intertidal Marsh

  This is the area generally lying between the daily tides. It is dominated by smooth cordgrass, which is biologically very productive.

- HM High Marsh

  This wetland zone is generally above the daily tidal flow and is flooded only about 10 days out of the month. It is also flooded by storm tides in this area. High marsh is dominated by salt hay, spike grass, and less vigorous, smooth cord grass. It is moderately productive, has value for wildlife, and forms an important buffer between uplands and estuarine waters. There is a coastal fresh marsh in the southern portion of the Village. There are also two small formerly connected tidal wetlands north of Porpoise Channel.

- FM Coastal Fresh Wetlands

  These are common areas in New York and are found mostly where freshwater runoff is backed up by daily tides. They are usually

bordered by rushes, cattails and brackish water cordgrass, as well as by pickerel weed and marsh roses. This type of wetland is highly productive and has extremely high value for wildlife.

- FC Formerly Connected Tidal Wetlands

  These are areas that have been partially isolated by a roadway or impoundment from the normal tidal flow. These wetlands usually retain their marine plant community, although phragmite communis (common reed) does infiltrate the area to some degree.

The 100-year flood[1] plain identified as a part of the National Flood Insurance Program on the Flood Insurance Rate Map is shown on the Watershed Map. The 100-year flood plain is located on shallow sloped areas adjacent to the water and is characterized by wetlands and minimum depths to the water table. Septic systems should not be sited in these areas because flooding and high water table will cause septic systems to malfunction. The pollutants discharged in the critical watershed area have a greater probability of reaching surface waters. Development should be limited within the primary watershed boundary to minimize pollutant (including sediment) loadings to the nearby waterbodies.

There are a number of dredge spoil deposit sites located adjacent to Porpoise Channel. These are indicated on Map No. 1.

1 That area inundated by the 100-year flood plain. This flood has a 1% chance of being equalled or exceeded each year and is expected to be exceeded once on the average during any 100-year period.

WETLANDS
&
SIGNIFICANT FISH &
WILDLIFE HABITATS

MAP NO. 1

Prime Wildlife Areas

Prime wildlife areas (PWA) as delineated on the Wetlands and Significant Fish & Wildlife Habitats Map were derived from several sources. The sources include a study by the N. Y. State Department of Environmental Conservation entitled Area of Particular Concern to the Preservation and Maintenance of Fish and Wildlife Populations in the Coastal Zone of Long Island; a study prepared by S. K. Robbins entitled Stony Brook Harbor: An Interdisciplinary Analysis; and Draft Environmental Impact Statement for the Proposed River Boundary Establishment, Nissequogue River, Town of Smithtown, Suffolk County, prepared by the Quality Environmental Planning Corporation. As can be seen from the map, the prime wildlife areas predominately lie within the Stony Brook Harbor and Nissequogue River areas and the tidal and freshwater habitats associated with them.

According to the N. Y. State Department of Environmental Conservation, the surface water classification for the Nissequogue River is SC. SC waters are "suitable for fishing and all other uses except for primary contact recreation and for the taking of shellfish for market purposes." Stony Brook Harbor is classified as SA. SA waters are "suitable for shellfishing for market purposes and primary contact recreation." Both the Nissequogue River and Stony Brook Harbor are considered productive shellfish grounds. Hard shell clams, soft shell clams, oysters, blue mussels, rib bed mussels and razor clams can be found in both areas. In addition, shrimp, lobster, blue claw crabs, rock crabs and goat crabs have been found in both areas.

Both the river and harbor are also considered prime habitats for migratory and resident waterfowl. Common waterfowl include the Mute

Swan, Canada Goose, Mallard Duck, Black Back Duck, Green and Blue Winged Teal, Common and Redthroated Loon, Shoveler Duck, Canvas Duck, Greater and Lesser Scaup, Bufflehead and Common Merganser. In addition, several species of shore birds rely on the fish, shellfish and crustacians which inhabit the creeks and mud flats of both the river and harbor. The species of shore birds include Herons, Egrets, Rails, Sand Pipers, the Great Black-backed, Herring, Laughing, Black-headed and Little Gulls, and Terns.

Short Beach at the mouth of Nissequogue River, as well as areas along Long Beach and Young's Island adjacent to Stony Brook Harbor, contain colonies of Least Tern, an endangered species in New York State under ECL Section 11-0535. The Common Tern, Piping Plover, Osprey and Northern Harrier are also found within the river and habor areas. These are all threatened species in New York State. Also, Species of Special Concern within the river and harbor areas include the Common Loon, Least Bittern, and Common Barn Owl. The Great Blue Herons and Clapper Rails remain all year round. The extensive marshes provide them with nesting sites and cover.

The predominant species of fish are Smelt, American Eel, Fathead Minnow, Striped and Variegated Killifish; Winter, Summer and Smooth Flounder, Bluefish and Striped Bass.

In the upland habitats, the most common songbirds of the study area are Rock and Morning Doves, Red-headed, Downy and Common Woodpeckers; Swallows; Purple Martins; Jays, Common and Fish Crow; Black Capped Chickadee; House and Winter Wrens; Mocking Birds; Catbirds; Robins; Warblers; Sparrows; Orioles; Summer and Scarlet Tanagers; and Cardinals. Upland gamebirds include Ruffed Grouse, Wood Cock, Quail and Ring-necked Pheasant. Common predatory birds include Sparrow Hawk, Marsh Hawk and Short-eared Owl.

Common mammals in the study area include Eastern Mole, Opossum, Red Bat, Eastern and New England Cottontail; Eastern Chipmunk, Gray and Flying Squirrel, White-footed, Meadow and House Mouse; Muskrat, Norway Rate, and Racoon. The Short-tail Weasel is found in this section but is considered rare.

Woodlands

Most of the area, both developed and undeveloped within the Village of Nissequogue is forested. There are presently three types of forests found within the Village. In undisturbed areas a bottomland type of habitat can be found which is characterized by high groundwater table, moderate to steep slopes, low elevation and the presence of red maple, black tupelo, gray birch, tulip trees and American beech trees. Dry oak forests also occur on areas of fertile, well drained soils with level to steep sloping topography. In the oak forests the predominant trees consist of red, black, white and scarlet oak intermixed with various hickory species. In many locations a heavy mountain laurel understory also occurs. The third type of woodland to be found is a direct result of formerly cleared areas which are currently reverting back to climax forests. Such areas that were formerly cleared or altered are characterized by fast growing types of vegetation consisting predominately of desiduous trees and vines including black locust, wild black cherry, red cedar, ailanthus, grey birch, poison ivy, raspberries, multiflora rose, catbriar, and grape.

Old Fields

These lands were once used for agricultural or other purposes. Old fields are characterized by abandoned farm or nursery fields in various stages of successional vegetation. The first stages of growth include species of grasses, red cedars, small shrubs including sumac, blackberry,

bayberry and beech plum and scattered seedlings of desiduous trees such as black cherry, gray birch, sassafras and black locust. Over time medium to large shrubs and larger trees predominate with the remainder in small grassy open areas. Eventually, the area will become a first growth woodland. Large tracts of old fields are located in the northeastern and southern sections of the Village with small plots dispersed throughout the Village.

Surficial Geology

It should also be noted that much of the Village has surficial geologic deposits of "thin till" generally less than five feet thick. The southern portion of the Village is underlain with Harbor Hill Morainal deposits. Some of the area may be underlain with clay. Clay has a low percolation rate and is not conducive for installation of septic systems. According to Suffolk County Department of Health Services regulations, such impermeable deposits must be removed, if possible, to clean sand and gravel before leaching pools can be put in.

Soils

The Soils Map (No. 2) taken from the Suffolk County Soil Survey, 1975) outlines three significant soil types for resource management, Carver soils which should not be extensively cleared and Haven and Riverhead soils which should be stockpiled and conserved. While the Haven and Riverhead soils are most suitable for lawns, all future development should have a minimal amount of lawn area due to the potential impact of lawn fertilizers on groundwater and surface water quality. The areas indicated in white on the Soils Map represent other various soil types, generally sandy soils. The natural resources and physical characteristics associated with these areas take precedence over the soil characteristics.

SOILS

MAP NO. 2

Carver soils are comprised of deep, excessively drained, course textured soils. These soils have a very low moisture capacity and very low natural fertility. Permeability is very rapid throughout all soil layers. The main subset of this soil type within the Village is the CpE designations at fifteen to thirty-five percent slopes respectively. Due to droughtyness and steep slopes associated with these soils, they should remain in natural vegetation.

Riverhead soils consist of deep, well-drained, moderately coarse textured soils formed in a mantle of sandy loam or fine sandy loam over thick layers of course sand and gravel. These soils have a moderate to high available moisture capacity and internal drainage is good. Permeability is moderately rapid in the surface layer and subsoil layer and very rapid in the substratum. Natural fertility is moderate requiring application of lime and fertilizer to obtain the best results. The two subsets of this designation which occur within the Village are RdA and RdC which contain zero to three percent and eight to fifteen percent slopes respectively. The steeper slopes at 8% to 15% present a moderate limitation to the development of homes, trails or other similar development.

Haven soils consist of deep, well-drained medium textured soils formed in a loamy or silty mantle over stratified course sand and gravel. These soils have a high to moderate available moisture capacity and internal drainage is good. Permeability is moderate in the upper layers and rapid in the substratum. The two subsets, HaA and HaB, contain zero to two percent and two to six percent slopes respectively. These soils are the most fertile and productive within the Village. These soils require the least amount of fertilization and irrigation for lawns, crops and landscaping.

WATERSHEDS

A watershed can be defined as a hydrologic system in which all of the land and surface waters drain to a single receiving water body (i.e., lake, bay, ocean, etc.). It is a region of land area bounded by a ridge or connection between topographic high points. Boundaries of watersheds in natural areas are more easily defined, particularly those watersheds which drain to distinct estuaries and bays on the north shore.

Watersheds, with their various land uses and activities, have a major influence on the quality and quantity of fresh, surface and groundwaters and are a determinant of the physical and biological characteristics of all Long Island waters. Pollutants from watersheds directly influence the biota, environmental productivity, and commercial-economic value of the coastal waters.

In its natural state, a watershed functions as an aquifer recharge and storage area for stormwater and as a filtration system for waters flowing to surface, ground and marine waters. During periods of normal rainfall, a natural watershed has a generally continuous flow of fresh-waters to aquatic and maritime systems.

The Watershed Map illustrates the major ridge lines, drainage basins, swales and high groundwater areas found in the Village of Nissequogue. Basically, the study site is divided into three separate basins, one to the Nissequogue River, one to Stony Brook Harbor, and the other to Smithtown Bay, as indicated by the major ridge line shown on the map. The ridge lines show the topographic high points within the Village and indicate the direction of surface and groundwater flows as well.

WATERSHED

MAP #3

Extensive major swales also occur both in the Nissequogue River and Stony Brook Harbor watersheds. These areas may be subject to stormwater flooding and groundwater seepage which directly enter the river and harbor respectively.

In addition, the steep slopes adjacent to such swale areas are very susceptible to erosion resulting from development which can impact both surface and marine waters as well. Development within such areas should preserve the steep slopes of swales and maintain existing drainage patterns in order to minimize environmental impact.

As also can be seen on the Watershed Map, there are a few areas which have seasonal high groundwater levels less than two feet from the surface. In such areas developmental constraints limiting development exist.

EXISTING LAND USE

Land use in Nissequogue Village was determined using various sources. The most current tax maps of the Village were used to create a base for the study. Acreage figures were obtained from the tax maps as were the locations of public and semi-public lands. Aerial photographs taken in 1980 were used to pinpoint developed parcels. A field survey was conducted during November of 1984 to update data from the aerial photographs. The field survey was also used to gather other information, such as topography and road conditions and to formulate impressions of the Village.

Since the entire area of Nissequogue Village is residentially zoned, the only land uses in the Village are those permitted under residential zoning (Table 6). The entire Village has 3.59 square miles of land area, excluding wetlands.

EXISTING LAND USE

MAP NO. 4

Table 6 - Land Use - November 1984

Use	Residential	Farm	Institution	Recreation/ Open Space	Roads	Vacant	Total
Acres	1,308.9	88.9	73.7	395.7	89.6	342.7	2,229.5
%	56.9	3.9	3.2	17.2	3.9	14.9	100.0

Residentially used land amounts to 56.9% of Nissequogue's area. This figure is a little misleading because 40% of the residentially used land can be further subsidized. In the last few years there has been subdivision of estate properties, and occupied parcels as small as four acres have yielded an additional building lot. Residential subidivisions have usually been in the form of cul-de-sacs, but some have incorporated flag (panhandle) lots and right-of-ways over others' properties.

There are still several farms, most of which are horse farms, but these, too, are being subdivided. As land prices and taxes continue to increase, farms and estates continue to face development pressures.

Institutional land uses amount to 73.7 acres, almost all of which are owned by the Knox School, which is a private, non-denominational secondary school. This school has two major holdings, one in the southern part of the Village and the main one in the northeastern part of the Village. Two small institutional parcels are occupied by the fire department and the Village Hall.

Land used for recreation and open space occupies a large proportion of the Village. Almost four-hundred acres are in this cate-

gory, comprising 17.2% of the land area in the Village. Nature Conservancy owns over one-third of this category and the golf course owns almost one-third. Smithtown Town owns 91.2 acres in the Village: Short Beach on the northwestern point and Long Beach and adjacent park and marina facilities on the northeastern peninsula. The Village's prime holding is a wildlife refuge at the tip of the northeastern peninsula. All of the recreation land is located in the northern half of the Village, leading to considerable summertime traffic on the Village's major roads.

Vacant land accounts for 14.9% of all the land in the Village. Of the 342.7 acres which are vacant, most are small lots. The largest single vacant lot is only 17.3 acres.

The Land Use Map shows the extent of the various land use classifications. The large amount of land in the recreation and open space category is evident from the map. From the Land Use Map, it looks as though there is very little land left for development, but this is not the case. A more accurate picture can be seen in the section titled "Land Available for Development" and on the map by the same name.

ZONING

The current Village zoning ordinance was adopted in 1968. The major requirements for the two residential districts that comprise the entire ordinance are in the following table:

Table 7 - Current Zoning Regulations

	Lot Size	Width at Building Line	Minimum Depth	Minimum Front Yard	Minimum Side Yard	Minimum Rear Yard
R-2	2 acres	250	250	100	60	60
R-1	1 acre	125	200	50	30	50

The R-2 zone covers most of the Village.The R-1 zone is confined to the town beaches and the dwellings on East Long Beach Road. Even though the R-2 zone has much more area than the one acre zone, there are only 25 lots that do not conform to the prevailing zoning compared to 45 in the R-1 district. Many of the less than one acre lots are located in the flood hazard zone.

The minimum habitable floor areas of 1,200 square feet and 1,800 square feet in one and two story buildings in the one acre zone and 1,800 square feet and 2,100 square feet in the two acre zone are higher than the towns in the region but similar to other estate villages in the area.

LAND AVAILABLE FOR DEVELOPMENT

Land available for development is defined as being all land which has a potential for accommodating new housing units under the existing zoning. This not only includes vacant land but estates and oversized parcels which can be further subdivided, such as the golf course and the Knox School. This is not to say that all of this property will be developed, but it might be. Many estates and farms in the Village have been subdivided and are presently being subdivided. Golf courses and private schools have become available for development in other parts of Suffolk County so there is a possibility of sale of these parcels in the future. The map titled "Land Available for Development" shows the extent and location of all land which could be used for new housing. The following table identifies available land by category, zoning and potential building lot yield.

Table 8 - Land Available for Development - November 1984

	Minimum Lot Size	Acres	Building Lot Yield
Vacant subdividable	2 acre	105.7	45
Lots	1 acre	14.8	12
Vacant individual	2 acre	217.5	97
Lots	1 acre	4.7	10
Estates and	2 acre	522.2	165
Oversized parcels	1 acre	17.8	12
Golf course	2 acre	126.1	50
The Knox School	2 acre	72.1	28
Total	2 acre	1,043.6	385
	1 acre	37.3	34
	Total	1,080.9	419

Vacant land is divided into two categories: subdividable lots and individual lots. Subdividable lots can accommodate two or more new houses while individual lots represent single building lots which cannot be further divided. There are 120.5 acres of subdividable lots which could yield 57 new dwellings. Since the largest vacant parcel is only

LAND AVAILABILITY FOR DEVELOPMENT

MAP No. 5

17.3 acres, vacant land cannot accommodate large subdivisions and clustering opportunities are limited. Two-thirds of all vacant land or 222.2 acres is in the individual lot category and can accommodate 107 new houses. Individual lots represent an immediate potential for housing in the near future.

Over half of all the land available for development is in the estate and oversized parcel category. This means that there is an existing housing unit on a parcel which can be further subdivided. Farms are included in this category and portions of farms have recently been subdivided. Some estates have also recently been subdivided. Some small estates may continue to exist for a long time.

The Nissequogue Golf Course is the largest single parcel in the Village with 126.1 acres. As such and because of its access to Stony Brook Harbor, it warrants special study, in case it should ever be considered for development. Many other golf courses have been proposed for development in other parts of the County and the Nissequogue Golf Course with its attractive site may not long escape the developers' eye. At the current two acre zoning, the golf course could yield 50 building lots.

The Knox School has two large parcels which could be developed should the school close. The northern parcel is the second largest parcel in Nissequogue having 56.7 acres with access to Stony Brook Harbor. This could accommodate 22 new houses and the 15.4 acres of school property in the southern part of the Village could accommodate 6 more houses.

Contrary to what the land use map shows, almost half of the land in the Village is available for development. This amounts to 1,080.9 acres which could accommodate an additional 419 building lots or new houses. This represents a potential 82% increase over the 511 housing units which presently exist or are under construction.

MAXIMUM POPULATION

Population growth is dependent on the amount of new housing which can be built and, therefore, on the land available for development. If the mix of new residents is similar to existing residents, the averable household size for incoming households would be about 3.5. Considering the large minimum floor area requirements for new houses, this household size seems reasonable. If all available land were developed, there would be 419 new housing units which would translate to a population increase of 1,467 people. Table 9 indicates the amount of population to be added from various types of land development.

Table 9 - Maximum Population

	Potential Building Lots	X	Average Household Size	=	Potential Population Increase
Vacant subdividable lots	57		3.5		200
Vacant individual lots	107		3.5		374
Estates and oversized parcels	177		3.5		620
Golf course	50		3.5		175
The Knox School	28		3.5		98
Total	419		3.5		1,467

Aging of the resident population will have a negative impact on population growth. As children grow up and leave home, and as one family member may predecease another, the average household size is expected to drop to around 3.2. This household size drop will amount to a population decline of 130 people. This would result in a total population growth of 1,337 which is an 85.4% increase over the 1984 population of 1,566.

Therefore, the saturation population for Nissequogue is 2,903. This is the population growth added to the existing population and is the population which should be used as the Village's planning target since it is the maximum population according to current zoning. As long as some estates, farms or vacant land still remain, the saturation figure will not be reached. If saturation is reached, the population density would be 809 persons per square mile, which would still be considered a rural population. The 1984 density was 436 persons per square mile.

HISTORIC LANDMARKS

The Village of Nissequogue has a rich history as is evidenced by the over 54 historic and archaeological sites that exist within the study area. In fact, Bull Smith, the founder and patentee of the Town of Smithtown, originally lived and was buried in the Village. The Village is justly proud of its heritage as the site were Smithtown was founded and the community carefully monitors any development within the Village in order to preserve the historic integrity of the area.

The study area contains many of the early houses dating from the 17th to early 19th century, which were originally built or owned by the founding family of Smithtown. The later houses and alterations to the earlier ones within the Village are attributable to the decendants of the early Smiths and their close friends. Many of the structures and additions were designed by prominant architects including Stanford White, Charles McKim, and the firms of Peabody, Wilson and Brown (Archibald Brown); Ford, Butler and Oliver (Lawrence Butler), and I. H. Green of Sayville.

PUBLIC FACILITIES

Recreation and Conservation Areas

Most of the publicly owned land in the Village is comprised of conservation lands in the Nissequogue River and Stony Brook Harbor. The Town beaches and marinas occupy 125 acres, while the Village administration buildings occupy less than two acres. The total public land amounts to 1,420 acres which includes wetlands and adjacent underwater land.

The recreation and conservation land in the Village which is publicly and privately owned is summarized in the following table:

Table 10 - Recreation and Conservation Land in Nissequogue

Ownership	Acreage
Village Parks	27.5
Village Wetlands & Underwater Land	1,265.4
Town Parks	125.4
Nature Conservancy Land	138.5
Nissequogue Golf Club	126.1
Smithtown Bay Yacht Club	2.0
Wilderness Property Owners	0.5
Boney Land Homeowners Association	0.3
Total	1,685.7

The only Village park is a passive area at the end of Long Beach. Considering the low density of the Village which allows private recreation facilities on most sites, plus the existence of the active recreation sites owned by the Town of Smithtown, there is little need for the Village to maintain active recreation areas. The Town properties are all accessible to Village residents. Marina

accessibility is very limited within the Town; however, Village sponsorship of such use would be difficult because of the probable impact on wetlands.

The only other open space parcels are a few cemetery sites in the Village.

Public Buildings

There are no longer any public school buildings within the Village so the only public structures outside of the Town beaches are for Village administration. The quasi-public buildings include the Knox School which has 72 acres on two locations.

Water Mains

Records from the 1980 census indicate that thirty dwellings in the Village which represent less than 7% of the total are served by a public or private water company. Over 400 dwellings are served by individual wells. The water mains of the Suffolk County Water Authority extend to the edge of the Village at Cordwood Path and Moriches Road.

Roadways

There is little flexibility in the collector roadway system due to narrow right-of-ways, sharp curves, lack of shoulders and absence of turning lanes. The continued growth of the Village and the existence of the Town recreation facilities guarantee conflicts between through traffic and adjacent residential access roadways which often have limited sight distances or sharp grades leading to the collector road.

Improvements similar to the work done on Long Beach Road are needed on River Road and Moriches Road. Small strips of land should be set aside as part of the subdivision approval processwhere shoulder, turn lane or curve reduction are needed for safer traffic movement.

The minor roads in the Village range from excellent to a continuous series of potholes. Standards for private streets should be similar to public roadways to avoid severe deterioration. Consideration should be given to eventual Village maintenance of some of the private roadways that provide access to large groups of homes. The current Village budget for maintenance and road improvement is $5,000 per mile which is less than other Villages with less than 25 miles of roads.

WATER QUALITY

The major portion of the Village that relies on private wells and cesspools or septic systems has had well samples done by the Suffolk County Department of Health Services. The only part of the Village that has a potential for water quality problems in the future is the East Long Beach Road sandspit area. One test well already shows a high chloride count and others have figures higher than in the remainder of the Village. The high chloride counts are an indicator of salt water being drawn into the private wells.

At the present time, the number of year-round homes in the neighborhood represents only half of the population in the small part of the Village. Development of the remaining lots, resubdivision of larger parcels and conversions from seasonal use are the likely means of adding population. The zoning of the area, as mentioned in an earlier section, is one acre; however, the pre-existing small lots will lead to an average density of 1/2 acre when all land is used. Considering that the fringe of this sandspit will not be usable for recharge, the shallow lens of freshwater (approximately 40' x 50') in the center of the peninsula could be the source of potable water for all the units. This same portion of the land will contain most of the private sewage disposal facilities.

If future water tests indicate chloride levels exceeding state standards or the presence of organics in private wells, it will be necessary for homeowners to drill new wells to a deep level. At present a few wells exist that are in the 150'-200' level. If this is not feasible, the Village might have to create a special district to provide alternatives. There are four different alternatives that

could be considered and evaluated, based on cost effectiveness. The lowest cost alternative is water treatment at the wellhead which should be shared by all dwelling units in the area even though all might not have a quality problem at one time. The second alternative is to obtain a site for a community system just west of the Town's Long Beach Park. Mains to all houses could be laid from this site.

The third and fourth alternatives are to extend public water mains to the area. The third alternative could be an extension within the Village approximately 3 - 4 miles from the end of the Suffolk County Water Authority mains on Moriches Road. The fourth is a public water main extension from the Stony Brook area. This choice is a shorter distance, but requires an inter-municipal agreement to extend a main under Stony Brook Harbor and through a Village preserve.

IMPACT OF DEVELOPMENT

Impacts on Geological Land Forms

Cut and fill operations for the purposes of building roads and foundations will directly change the surface landforms. Filling in or building in swale areas can alter surface water runoff patterns which can result in flooding within the swale iteself or diversion of waters causing erosion drainage and flooding problems elsewhere. In addition, denuding steep slope areas for development purposes increases stormwater runoff, causing erosion. In areas with major swales and steep slopes, erosion can take place rapidly moving large amounts of sediment to low lying areas and surface waters. These increased sediment loads can adversely affect ecosystems associated with tidal wetlands, freshwater marshes and surface waters.

Impacts on Surface Waters

The flushing rate of the marine waters within the study area is not rapid, therefore, they can be considered to have a high pollution susceptibility to contaminants from septic systems, stormwater, runoff (i.e. lawn fertilizers, animal wastes) and other development activities.

Impacts on Groundwater

Groundwater, as fresh surface waters, are also susceptible to pollution from septic systems and the use of fertilizers, pesticides, herbicides and organic chemicals contained in household products. Nitrates and other forms of nitrogen are probably the major groundwater pollutant in residential developments. They are contained in the effluent of septic systems and also leach out of the soil from excessive fertilizer use. The amount of nitrogen compounds in groundwater is usually directly related to the density of development and

the amount of landscaped areas with grass and ornamental shrubs. High nitrate levels can cause methemoglobinemia in infants and, therefore, the maximum level of nitrates in drinking water has been set at 10 mg/l for health reasons. Since fresh surface waters on Long Island are actually an extension of the groundwater table, the amount of nitrogen in the groundwater can increase nitrogen levels in ponds. Likewise, groundwater seepage into marine waters, together with stormwater runoff, can adversely affect marine water quality.

DEVELOPMENTAL CONSTRAINTS

The "Developmental Constraints" mapping series delineates those regions within the study area which should preclude development due to their hazardous nature or require the adherence to specific performance standards in order to minimize possible impacts. (See "Site Development Recommendations"). Table 11 lists the various areas within the Village that are subject to environmental constraints, what the different constraints to development are, and the recommended management. The developmental constraints are shown on the Soil Suitability (Map No. 6) and the Slope Map (No. 7).

Table 11 - Developmental Constraints Summary

Area	Constraint	Recommended Management
Beach	Flooding	Preservation
Bluff and 150' Buffer Zone	Unstable landform subject to severe erosion	Preservation within Setback controls Stormwater runoff performance standards
Dunes	Unstable landform subject to erosion and/or migration	Preservation
Major Swales and Depressions (intermittent) streams	Area subject to erosion, stormwater flooding and groundwater seepage	Preservation for swales with steep slopes; maintenance of existing drainage patterns in swales. No increased stormwater runoff into swales
Depth to seasonal high water less than 4'	Interferes with building, laying of pipes and paving Flooding Septic System failure	Preservation for Groundwater quality protection Surface water quality protection Marsh protection
Moderate and steep slopes (8-15%) (15-25%) (>25%)	Increased runoff, possible flooding, moderate to severe erosion, sedimentation of low lying areas. Roads should be kept to <10% grade	Extra grading and stabilization required See Steep Slope Recommendations
Flood hazard areas - 100 yr. floor plain	Subject to severe flooding during storm periods, septic system failure and possible contamination of fresh water supply	Preservation
Freshwater wetlands and surface waters	Subject to flooding, failure to septic systems, protection of vegetation under Article 24 ECL	Preservation
Tidal Wetlands	Subject to flooding, failure to septic systems, protection of vegetation under Article 24 ECL	Preservation
Endangered and Threatened Species of Flora and Fauna	Species protected under the Federal "Endangered Species Act of 1973", Article 9-1503 of the NYS ECL (flora) and Article 11-0535 of the NYSECL (fauna)	Preservation See Natural Vegetation and Wildlife Habitats Vegetation

Table 11 - Developmental Constraints Summary (cont/d)

Area	Constraint	Recommended Management
Aquifer recharge areas	Must maintain an adequate and pure source of freshwater	Prevent groundwater contamination through low density development, minimal site clearance and proper maintenance of on-site systems
Archaeologic and Historic Areas	Do not disturb archaeologic and historic sites without approval	Survey important sites, record features and salvage artifacts for study
Cemeteries	No disturbance	Preservation
Trails	Maintenance of public access to important environmental areas	Preserve for public use whenever possible

Soils Suitability

The Soil Suitability Map (No. 6) includes three major mapping units.

- o Soils not suitable for development

Abbreviation	Soil Name
Bc	Beach
BD	Berryland mucky sand (usually associated with freshwater wetlands and high water table areas)
Du	Dunes
Es	Escarpment
Ra	Raynham loam (associated with freshwater wetlands and high water table areas)
Sd	Sudbury sandy loam (associated with freshwater wetlands and high water table areas)
Tm	Tidal Marsh
We	Wareham loamy sand (associated with freshwater wetlands and high water table areas)

See Table 12 (Limitations of Soils for Development)

- o Soils that may be suitable for low density development but are not suitable for lawns (see soils not suitable for development above).

Abbreviation	Soil Name
CpE	Carver and Plymouth Sands. See slope map, stormwater runoff and erosion control recommendations.
PiB	Plymouth loamy sand
Pic	Plymouth loamy sand

SOIL SUITABILITY

MAP NO. 6

Table 12 - Limitations of the Soils for Development

Soil	Sewage disposal fields	Homesites [1]	Street and parking lots	Lawns, landscaping, and golf fairways	Pipeline locations [1]	Sanitary landfill	Camp areas	Paths and trails	Picnic grounds and extensive play areas	Athletic fields and intensive play areas
Beaches	Severe: high water.	Severe: high water.	Severe high water.	Severe: high water.	Severe: high water.	Severe: high water.	Severe: high water.	Severe: high water.	Severe: high water.	Severe: high water.
Berryland mucky sand	Severe: prolonged high water table above a depth of ½ foot.	Severe: prolonged high water table above a depth of ½ foot.	Severe prolonged high water table above a depth of ½ foot.	Severe: sandy surface layer; high water table above a depth of ½ foot.	Severe: prolonged high water table above a depth of ½ foot.	Severe: prolonged high water table above a depth of ½ foot.	Severe: prolonged high water table above a depth of ½ foot.	Severe: prolonged high water table above a depth of ½ foot.	Severe: prolonged high water table above a depth of ½ foot.	Severe: prolonged high water table above a depth of ½ foot.
Carver and Plymouth sands, 3 to 15 percent slopes.	Slight to moderate: slopes in places.	Slight to moderate slopes in places	Moderate to severe: slopes.	Severe: sandy surface layer.	Severe: stability.	Severe: rapid permeability hazard of water pollution.	Severe: sandy surface layer, slopes.	Severe sandy surface layer.	Severe: sandy surface layer.	Severe: sandy surface layer.
Carver and Plymouth sands, 15 to 35 percent slopes.	Severe: slopes [1]	Severe: slopes.	Severe: slopes.	Severe: slopes; sandy surface layer.	Severe: stability.	Severe: rapid permeability hazard of water pollution.	Severe: sandy surface layer; slopes.	Severe sandy surface layer; slopes.	Severe sandy surface layer; slopes.	Severe: sandy surface layer; slopes.
Cut and fill land, gently sloping [4]	Slight	Slight	Moderate: slopes [4]	Severe: sandy surface layer.	Severe: stability.	Severe: rapid permeability hazard of water pollution.	Moderate: sandy surface layer.	Moderate sandy surface layer	Moderate: sandy surface layer.	Moderate: sandy surface layer.
Dune land [3]	Moderate: water table within 4 feet of surface in places.	Variable	Variable	Severe: sandy surface layer.	Severe: stability.	Severe: hazard of water pollution.	Severe: sandy surface layer.	Severe sandy surface layer.	Severe: sandy surface layer.	Severe: sandy surface layer.
Escarpments. Variable: no interpretations made.										
Haven loam, 0 to 2 percent slopes	Slight [1]	Slight	Slight	Slight	Moderate: stability.	Severe: rapid permeability; hazard of water pollution.	Slight	Slight	Slight	Slight.
Haven loam, 2 to 6 percent slopes	Slight [1]	Slight	Moderate: slopes [4]	Slight	Moderate: stability.	Severe: rapid permeability; hazard of water pollution.	Moderate for trailers: slopes. Slight for tents.	Slight	Slight	Moderate: slopes
Montauk fine sandy loam, 0 to 8 percent slopes.	Severe: moderately slow permeability.	Slight	Moderate: slopes [1]	Slight	Slight [2]	Slight [2]	Moderate: moderately slow permeability.	Slight	Slight	Moderate: slopes; moderately slow permeability.
Montauk fine sandy loam, 8 to 15 percent slopes.	Severe: moderately slow permeability.	Moderate: slopes.	Severe: slopes.	Moderate: slopes.	Slight [2]	Slight [2]	Severe for trailers: slopes. Moderate for tents: slopes.	Slight	Moderate: slopes.	Severe: slopes.

Table 12 - Cont/d

Soil	Sewage disposal fields	Homesites [1]	Streets and parking lots	Lawns, landscaping, and golf fairways	Pipeline locations [2]	Sanitary landfill	Camp areas	Paths and trails	Picnic grounds and extensive play areas	Athletic and intensive play
Plymouth loamy sand, 3 to 8 percent slopes.	Slight [3]	Slight.	Moderate: slopes [4]	Severe: sandy surface layer.	Moderate: stability.	Severe: rapid permeability; hazard of water pollution.	Moderate: sandy surface layer.	Moderate: sandy surface layer.	Moderate: sandy surface layer. [8]	Moderate: surface slopes
Plymouth loamy sand, 8 to 15 percent slopes.	Moderate: slopes [3]	Moderate: slopes	Severe: slopes [4]	Severe: sandy surface layer.	Moderate: stability.	Severe: rapid permeability; hazard of water pollution.	Severe for trailers: slopes. Moderate for tents: slopes; sandy surface layer.	Moderate: sandy surface layer.	Moderate: sandy surface layer.	Severe:
Riverhead sandy loam, 0 to 3 percent slopes.	Slight [3]	Slight	Slight	Slight	Moderate: stability.	Severe: rapid permeability, hazard of water pollution.	Slight	Slight	Slight	Slight.
Riverhead sandy loam, 3 to 8 percent slopes.	Slight [3]	Slight	Moderate: slopes [4]	Slight	Moderate: stability.	Severe: rapid permeability, hazard of water pollution.	Moderate for trailers: slopes. Slight for tents.	Slight	Slight	Moderate
Riverhead sandy loam, 8 to 15 percent slopes.	Moderate: slopes [3]	Moderate: slopes	Severe: slopes [4]	Moderate: slopes	Moderate: stability.	Severe: rapid permeability, hazard of water pollution	Severe for trailers: slopes. Moderate for tents: slopes.	Slight	Moderate: slopes	Severe:
Riverhead very stony sandy loam, 8 to 15 percent slopes.	Moderate: slopes [3]	Moderate: slopes	Severe: slopes [4]	Severe: very stony.	Moderate: stoniness; stability.	Severe: rapid permeability, hazard of water pollution.	Severe for trailers: slopes. Moderate for tents: slopes, stoniness.	Moderate: stoniness.	Moderate: slopes	Severe:
Riverhead and Haven soils, graded, 0 to 8 percent slopes. [5]	Slight [3]	Slight	Moderate: slopes [4]	Slight	Moderate: stability.	Severe: rapid permeability, hazard of water pollu-	Slight	Slight	Slight	Slight.
Scio silt loam, sandy substratum, 0 to 2 percent slopes.	Moderate: seasonal high water table at depth of 1½ to 2 feet.	Moderate: seasonal high water table at depth of 1½ to 2 feet	Moderate: seasonal high water table at depth of 1½ to 2 feet.	Slight	Moderate: seasonal high water table at depth of 1½ to 2 feet.	Severe: rapid permeability.	Moderate: seasonal high water table at depth of 1½ to 2 feet.	Slight	Slight	Slight.
Wareham loamy sand	Severe: seasonal high water table at depth of ½ to 1½ feet.	Severe: seasonal high water table at depth of ½ to 1½ feet.	Moderate: seasonal high water table at depth of ½ to 1½ feet.	Severe: sandy surface layer.	Severe: seasonal high water table at depth of ½ to 1½ feet.	Severe: rapid permeability; seasonal high water table at depth of ½ to 1½ feet.	Severe: seasonal high water table at depth of ½ to 1½ feet.	Moderate: seasonal high water table at depth of ½ to 1½ feet.	Moderate: seasonal high water table at depth of ½ to 1½ feet.	Severe: high water at depth to 1½ fe
Tidal marsh	Severe: high water.	Severe: high water.	Severe: high water.	Severe: high water.	Severe: high water.	Severe: high water.	Severe: high water.	Severe: high water.	Severe: high water.	Severe: water.

[1] High water table is less restrictive for houses without basements

[2] Stability, as used here, refers to the tendency of the soils to slough on a ditch 6 feet deep; limitations are less restrictive for shallower ditches

[3] In some areas, the water table is 1½ to 4 feet below the surface of these parts. Downward movement of water is impeded by silt and sand.

[4] Slight for town or county roads.

[5] Moderate for town or county roads.

[6] These units are mainly in built-up areas, and they are not well suited to uses other than present use. Interpretations in the table apply to small ungraded areas.

[7] Possible pollution hazard to lakes, springs, or shallow wells in these rapidly permeable soils.

[8] If the till layer is less than 3 feet thick in these soils, the limitation is severe.

[9] The till substratum of these soils is more difficult to excavate than the substratum of other soils in the county; however, the till does not appreciably reduce workability.

[10] Water infiltration rates are slightly impeded by silty subsoil in places.

Source: Soil Survey of Suffolk County, N. Y.

o Soils recommended for conservation

Abbreviation	Soil Name
HaA	Haven Loam
HaB	Haven Loam
RdA	Riverhead sand loam
RdB	" " "
RdC	" " "

These soils are prime farm soils and should be stockpiled and protected during site grading.

Steep Slopes

Slopes within the Village are identified on the Slope Maps. There are four major categories of slopes:

0 - 8%

8 - 15%

15 - 25%

> - 25%

In addition to slopes, bluffs were also mapped.

Sites with slopes greater than eight percent generally require more disturbance of the natural grade and vegetation to develop. Areas with slopes greater than fifteen percent usually are associated with either headlands or major swales. Erosion due to site development is sometimes difficult to contain on site. Stormwater is more difficult to contain on site when steep slopes or swales are developed.

Bluffs are constantly being subjected to wave action, stormwater runoff and groundwater seepage. Development adjacent to bluff areas requiring grading, removal of vegetation, siting of buildings, roads or parking lots, will contribute additional stormwater runoff to the area eroding the edge of the bluff and face. Excessive runoff may eventually cause bluff slump and collapse.

SLOPES

MAP NO. 7

WATERSHED MANAGEMENT

One goal of watershed management is to maintain the valuable functions of the watershed while allowing development to occur. Realization of this goal depends upon the successful achievement of the objectives listed below. Two major general objectives for watershed management are:

- o Minimize pollutants reaching surface waters and groundwater
- o Maintain the natural hydrologic system

The general techniques to achieve these goals should apply to all new site development within the Village. They are listed by category below:

- o Use stormwater control measures such as sediment traps, leaching pools and recharge basins to prevent the direct discharge of stormwater or sediments into wetlands or surface waters
- o Minimize the contact of stormwater runoff with the soils by recharging stormwater as close as possible to the source. This will aid minimizing soil erosion and sedimentation and the subsequent clogging of stormwater drainage systems.

SITE DEVELOPMENT AND OPEN SPACE PRESERVATION RECOMMENDATIONS

Reduce Stormwater Runoff and Maximize High Quality Recharge

- The stormwater generated by a new development project should be recharged on-site within the boundaries of the project. Minimize the contact of stormwater runoff with the soils by recharging stormwater as close as possible to the source.
- Maximize the recharge of stormwater for all land uses. All stormwater from rooftops, patios, decks, sidewalks, and driveways should be discharged on-site.
- Eliminate the direct discharge of all stormwater runoff from new development, existing major roads, large public parking areas, and all other paved surfaces to surface waters and wetlands. Stormwater pollutants should be attenuated by using holding ponds, sedimentation basins and other measures that reduce flow velocity and increase storage time. Water discharged from these systems should be of acceptable quality before discharge into wetlands and surface waters. In addition, any filtering devices constructed as part of the drainage system must be adequately maintained in order to function properly.
- During the construction period, disposal of stormwater runoff generated by development activity should be handled on-site.
- Natural land features such as shallow depressions should be utilized, wherever possible, to collect stormwater on-site.

- o Stormwater runoff into and from swales should not be increased. Direct discharge of stormwater runoff from structures, buildings and paved areas into swales should not be permitted.
- o Where topography limits the recharge of stormwater on site, runoff should be collected from road surfaces and then either directed to sediment basins before discharge to a recharge basin or directed to leaching systems as part of an "in-line" storage system.
- o Encourage site designs that reduce impermeable paving. The use of permeable pavements should be encouraged in all driveways and parking lots. Measures such as these should be required in areas within 200 feet of surface and wetlands.

Maintain Major Swales in their Natural State

Swales should be maintained in their natural state, with no disturbance of the natural vegetation and soils in the swales nor alteration of the surface hydrology.

- o Do not increase stormwater runoff into and from swales
- o Do not alter the slope (filling, cutting) of swales
- o Direct discharge of stormwater runoff from structures, buildings, paved areas into swales should not be permitted.
- o Do not dump brush into swales.
- o Do not block swales except in cases of hardship where an existing structure would be undermined or inundated due to the stormwater runoff and sediment load carried in stormwater runoff.

Minimize Development on Steep Slopes

Slope management should result in a stable vegetated slope during site construction and operational phases of development.

Density controls are an important means of minimizing impacts on slopes. However, slope density standards alone are not sufficient for erosion management because these controls do not address areas that should be preserved or the conditions that influence erosion such as soil erosion and slope stabilization. Recommended site development erosion control techniques are listed below.

- Site structures so as to minimize alterations in grade on slopes. This does not necessarily mean building on the gentler slopes of a site. Very effective methods of slope stabilization can result from building on the steepest portion of the slope and using the structure as a retaining wall.
- Do not site roads and driveways on slopes more than 10%.
- Prevent development on slopes greater than 25% or on slopes within major swales.
- A site development plan should be approved before any site clearing or grading is allowed. All site plans should indicate future grades, the edge of vegetation disturbance and stormwater runoff and erosion control measures.
- Site grading should not result in the disturbance of stable slopes or structures on adjacent properties, and should not result in the accumulation of sediments on adjacent properties or in the primary watershed area.
- The natural vegetation on steep slopes directly bordering surface waters should not be disturbed.

Provide Bluff Setbacks

- Site all new development a sufficient distance from the top of the bluff so that natural processes acting upon the bluff will not endanger the structure, and so that the impacts upon the bluff due to site disturbance can be minimized. The minimum setback for structures should be based upon the erosional rate of the bluff and also upon the amount of land needed for the structure to remain unaffected by bluff recession for a period of 50 years. Thus, if the erosional rate is 2 feet per year and the setback if 100 feet, the structure should remain unaffected for 50 years. The land disturbance within the setback zone should be limited to 5% of the area.
- Do not allow stormwater from developed portions of the property to flow across the surface of the land to the bluff face. If the natural slope of the land is away from the bluff face, the slope should not be altered.
- Allow an adequate distance from the bluff face in natural vegetation to trap stormwater and to stabilize soils.
- Do not recharge stormwater in a quantity or location where surface runoff, subsurface or groundwater flow would undermine the bluff face.
- Minimize impermeable paving. Use trap rock or native gravel for driveways and permeable paving for other outdoor surfaces. Brick, flagstones and Belgium block on sand is a good alternative paving surface for slopes less than 2%.

- o Locate roads and driveways in such a manner that no stormwater from the road will reach the bluff face or the beach below.
- o Construct a berm parallel to the bluff face to trap stormwater from overland flow and to allow for percolation into the soils. Do not allow stormwater flow trapped by berms to reach the bluff face of an adjacent property.
- o Locate septic system leaching pools as far as possible from the face of the bluff. The underlying surficial material should not be confined by a claylense or other impermeable layer.
- o Cover disturbed soil areas with vegetation suitable for bluff locations.

Minimize Erosion and Sedimentation

- o The majority of the site should remain in natural vegetaion.
- o The creation of new grades greater than 33% (3 to 1 slope) should not be allowed except in special circumstances. The cut and fill on a site should be kept to a minimum wherever possible. Slopes of 25% or greater should not be disturbed.
- o No increased sedimentation of swales or wetlands resulting from the construction or operational phases of site development should be allowed.
- o All sediment resulting from construction-induced erosion should be trapped on the construction site. Site disturbance through clearing and grading should be minimized.
- o Site top soil should be stockpiled.

- o Stockpiled soils should be stabilized by planing with rye, oats or other quick germination grasses. Grass mixes or alternative types of vegetation require minimum fertilization.
- o Disturbed soils should be revegetated or seeded as soon as possible and before the certificate of occupancy is given.

Prevent Development within the 100-Year Flood Plain

- o All land within the 100-Year floor plain should not be cleared or developed.

Prevent Development Where the Depth to Seasonal High Water Table is Less than Three Feet

These areas are designated as conservation areas. No development should be permitted due to the high probability of failure of on-site systems and frequent flooding of basements in these areas.

- o Maintain area in natural vegetation
- o Additional stormwater should not be directed into these areas.
- o There should be no alteration of the natural slopes.

Preserve Natural Vegetation and Wildlife Habitats

- o Establish site clearing requirements in order to preserve as much natural habitat as possible. Natural vegetation should be continguous with natural vegetation on adjacent properties.
- o Areas of open space should be contiguous or connected by open space corridors so that wildlife has access to a larger habitat range.

- o No development should take place in areas containing endangered or threatened species of flora and fauna, and a minimum buffer zone required for species protection should be retained around such sites.
- o Maintain cover for wildlife in natural areas; do not remove shrubs and other understory vegetation.
- o Maintain existing woodlands and old fields.
- o Thin trees to allow sunlight to reach forest floor.
- o Thin out dead or diseased wood on trees. Leave fallen wood.
- o Maintain or provide a mixture of vegetation species within the Village.
- o Prevent the removal of trees and other natural vegetation on slopes greater than 25%.
- o Require maintenance of natural vegetation (a 100 ft. buffer) adjacent to surface waters, possibly through the provision of scenic easements.
- o The maintenance of natural vegetation should be encouraged to reduce sedimentation and the amount of future lawn areas.
- o Fertilizer should be supplied in small quantities to assure uptake by vegetation. Public education should be used as a means to prevent overuse of fertilizers.
- o Replant disturbed areas with vegetation native to Long Island. Plant vegetation that provides either food source or cover where existing vegetation has been removed. Do not plant crops or exotic species where planting and fertilization will affect groundwater or surface water quality.

- o Maintain existing sources of water supply and quality of waters for wildlife.

Protect Wetlands

- o Protect wetlands from increased sedimentation and nutrient loading by preventing the discharge of stormwater runoff and sedimentation directly into the wetland. Discharge stormwater upland to allow for the filtering action of soils and for groundwater recharge.
- o All wetland vegetation should be maintained. Dredging and site construction should not disturb tidal wetlands either by direct removal of vegetation or substrate, or by the alteration of adjacent slopes that would undermine the stability of the substrate. Maintain subsurface sediments to provide structural support for the soils of the marsh. Do not alter the elevation of the marsh. Discharge of pollutants into wetlands should be prohibited.
- o No wetland buffer zone vegetation should be disturbed by grading, erosion sedimentation or direct removal of vegetation. This wetland buffer zone should extend a minimum of 100 feet from the upland boundary of the wetland.
- o There should be no construction within 100 ft. of the upland boundary of a freshwater or marine wetland. This includes the introduction of impervious surfaces, utility equipment, roads, etc.

- o If social or economic needs outweigh the ability to protect a specific marine wetland, the wetland acreage lost should be offset by the reclamation of degraded areas or the creation of new wetlands. The sites selected for the development of new wetlands using uncontaminated dredge spoil must be in a low energy environment and at an appropriate elevation in relation to the tides for the type of marsh vegetation to be planted. The development of the new wetland should not result in the alteration of the physical characteristics of the systems in which it is located, and it should not disturb the productivity of existing habitats.
- o Shoreline owners desiring pleasure craft docks along their property should be encouraged to construct floating docks attached to elevated, pile supported, wooded walkways. This will minimize the need for bulkheading, thereby, minimizing disturbance to creek banks and associated vegetation.
- o If bulkheading is required for filled land or for soil stabilization adjacent to a wetland, the bulkhead should be located upland from the wetland at or above the highest yearly tide level elevation. Bulkheads should not block the surface and subsurface flow of freshwater to the wetland.
- o Do not deposit any material onto wetlands.
- o Do not dispose of material removed from roads to surfaces

where they will be transported by stormwater to wetlands or to the Harbor.

- o Do not allow herbicides, insecticides and other organic compounds to reach the marsh.

Minimize Lawn Areas

Table 13 lists the major soils found on Long Island and their limitations or suitability for use as lawns. The following constraints are related to turf quality rather than groundwater or surface water impacts. A slight constraint indicates no limitations or a few that can be overcome with relatively little cost, a moderate constraint indicates that the limitations are more difficult and expensive to correct, while a severe constraint indicates the soil is very poor and will require excessive modification or maintenance if used for lawns.

- o Establish or rehabilitate lawn area only when the presence of the following conditions indicates suitability for turf:
  - nearly level or moderately sloped terrain; (less than eight percent slope)
  - moderately drained soils; (a moderate permeability rate)
  - a moderately fine or medium textured surface
  - a small or a moderate amount of stony or sandy soil
  - a seasonal high water table more than 12" below the surface
  - soil or soils listed under "slight constraints" in Table 13.
- o Consider the use of alternate types of groundwater and other plant materials to avoid or reduce lawn area and the conse-

quent need for fertilizer applications, extensive watering and maintenance. (See the Fertilizer Chapter, in the 208 Nonpoint Source Handbook for a partial list of plants suitable for Long Island). Lawn alternatives might also include the establishment of one or more of the following:

- native woodland species
- meadow grasses
- perennial or self-sowing wild flowers
- pachysandara, ivy, or other evergreen groundcovers
- low growing deciduous or evergreen shrubs
- pine bark or wood chips as a groundcover
- crown vetch on steep slopes located in the sun
- leaf litter, pine bark or gravel as a mulch
- plan for the eventual replacement of an existing lawn area with trees, and shrubs and groundcover
- in coastal areas, use Dusty Miller, Beach Grass, Rugosa Rose, Virginia Creeper, Beach Plum or Black Pines to stabilize soils.

TABLE 13

Limitations of Soils For Lawns

Severe Constraints	Moderate Constraints	Slight Constraints
Atision sand	Bridgehampton silt loam, till substratum 6-12% slopes	Bridgehampton silt loam 0-6% slopes
Beaches	Haven loam 6-12% slopes	Bridgehampton silt loam, till substratum 2-6% slopes
Mucky sand	Montauk fine sandy loam 8-15% slopes	Haven loam 0-6% slopes
Carver & Plymouth sands 0-35% slopes	Montauk silt loam 8-15% slopes	Made land
Cut & fill land	Raynham loam	Montauk fine sandy loam 0-8% slopes
Deerfield sand	Riverhead sandy loam 8-15% slopes	Montauk silt loam 0-8% slopes
Dune land	Riverhead & Haven Soils 8-15% slopes	Montauk soils graded 0-8% slopes
Landfill (dredged, sandy)	Wallington silt loam	Riverhead sandy loam 0-8% slopes
Gravel pits	Walpole sandy loam	Riverhead and Haven soils 0-8% slopes
Montauk loamy sands 0-35% slopes		Scio silt loam, till substratum 2-6% slopes
Muck		Scio silt loam, sandy substratum 0-6% slopes
Plymouth loamy sandy 0-15% slopes		
Plymouth gravelly loamy sand 3-15% slopes		
Plymouth loamy sand silt substratum 0-8% slopes		
Riverhead very stony sandy loam 3-15% slopes		
Riverhead & Plymouth very bouldery soils 15-35% slopes		
Tidal Marsh		
Wareham loamy sand		
Whitman sandy loam		

Source: Soil Survey of Suffolk County. United States Department of Agriculture Soil Conservation Service and the Cornell Agricultural Experiment Station, April 1975.

SUBDIVISION REGULATIONS

In conducting the review of the subdivision regulations of the Village of Nissequogue, the following three documents were used:

1. Rules and Regulations of the Planning Board for the Subdivision and Platting of Land. Adopted: May 25, 1956.
2. All unidentified set of pages (Pages 5, 6, 9, 10, 11, 12, 23, 27, 53 and 54). Each page is labeled, "Revised January 21, 1971".
3. Specifications, Regulations and Requirements for Developers.

The first document was received by this department on November 29, 1968; the second document was received on November 18, 1971; a second copy of the second document was received June 8, 1972; and the third document was received on November 29, 1968. These documents were obtained as the result of requests made by the department for up-to-date copies of subdivision rules and regulations. It is the understanding of the department that these documents are the latest copies of the Village of Nissequogue regulations pertaining to the subdivision of land. The first part of this review is limited to the first two documents.

Judging from the contents of the first two documents, it appears that they do not represent an up-to-date and complete set of subdivision regulations. It appears that sometime between May of 1956 and January of 1971 that the first document was completely revised. On January 21, 1971, certain sections of the revised regulations were changed. The second document contains these changes.

Since ths staff is of the opinion that the subdivision regulations that were adopted in 1956 were completely revised, it would be meaningless to review them. A brief examination of the document found it to be out-dated and ill-suited to govern the process of land subdivision today. Formerly, the main concern was insuring that the map was of proper form and content for filing, and public improvements met minimum requirements. Today, there is greater emphasis on property designed and constructed public improvements and the effect that the subdivision will have on the environment of the area.

One interesting item in the original regulation dealt with railroads. There are no railroads within the Village of Nissequogue; yet, there is an item that addresses the subdivision's relationship to a railroad right-of-way. What makes this interesting is that most, if not all, of the municipalities that have railroads within their borders do not have any reference to railroads in their subdivision regulations.

Without the complete text of the revised subdivision regulations, the second document is useless. It was noticed, however, that this document cites the section of the Village Law that existed before the law was recodified (1972). This is one of the first things that should be updated.

If the Village of Nissequogue does not have a complete, up-to-date set of subdivision regulations, then the Village must take the necessary steps to develop and adopt a set. These new regulations must reflect the changing nature of subdivision layout. The regulations must also reflect the increasing concern to protect the environment, the diminishing supply of large

tracts within the Village and the growing tendency of the subdivider to create minor subdivision (subdivision with less than five lots and no public improvements).

No attempt was made to review "Specifications, Regulations and Requirements for Developers." It is not known when this document was adopted by the Village and when it was published as there is no date on or in this publication. Likewise, we do not know if this publication has been revised or replaced since we received the copy that we have in our file in 1968.

This document specifies the materials and methods of construction of public improvements in subdivisions. It is very important that construction specifications be kept up-to-date as the quality of construction is governed by them.

The review of this publication is best done by a licensed professional engineer who is well versed in highway construction and site improvement.

CONCLUSIONS

The natural resources within the Village have been identified through mapping and site visits. Developmental constraints and suitability for development has been determined for the variety of resources and areas recommended for preservation have been determined.

The preservation designation includes: bluffs, major swales, slopes greater than 25%, wetlands, beaches, all land within the 100-year flood plain, prime wildlife areas, land areas with a depth to groundwater less than 3 feet, all lands within 100 feet of wetlands and surface waters. Distrubance in these areas should either be completely prohibited or limited to 1% of the designated area. Development in these areas should only be permitted in conjunction with performance standards. The degree of development that the resource can sustain varies with its degree of sensitivity. Areas within 100 feet of surface waters or wetlands should not be a source of increased stormwater runoff, nutrients, contaminants, or sedimentation to surface waters or wetlands. Actions that may be permitted in these areas include: thinning of trees, development of trails or boardwalks and the planting of natural vegetation.

RECOMMENDATIONS

The major problem facing the Village is how to accommodate the expected development while retaining the residential amenities of the Village. Issues such as the inadequacy of the collector roadways that lead to the public recreation facilities and water supply to the sand spit area have been addressed. Therefore, the preservation of valuable open space and the protection of natural resources should have the highest priority in any future planning activities of the Village.

The only outright acquisitions of land that might be necessary are a few of the wetlands parcels that are not now in some form of public ownership. Most of the resources can be protected by cluster or density zoning, stringent subdivision regulations or local laws that incorporate the developmental constraints.

0-8%

8-15%

15-25%

>25%

BLUFF

SLOPES

Village of

NISSEQUOGUE

TOWN OF SMITHTOWN

COUNTY OF SUFFOLK, N.Y.

N

scale in feet

0 500 1000 1500

Suffolk County Planning Dept.

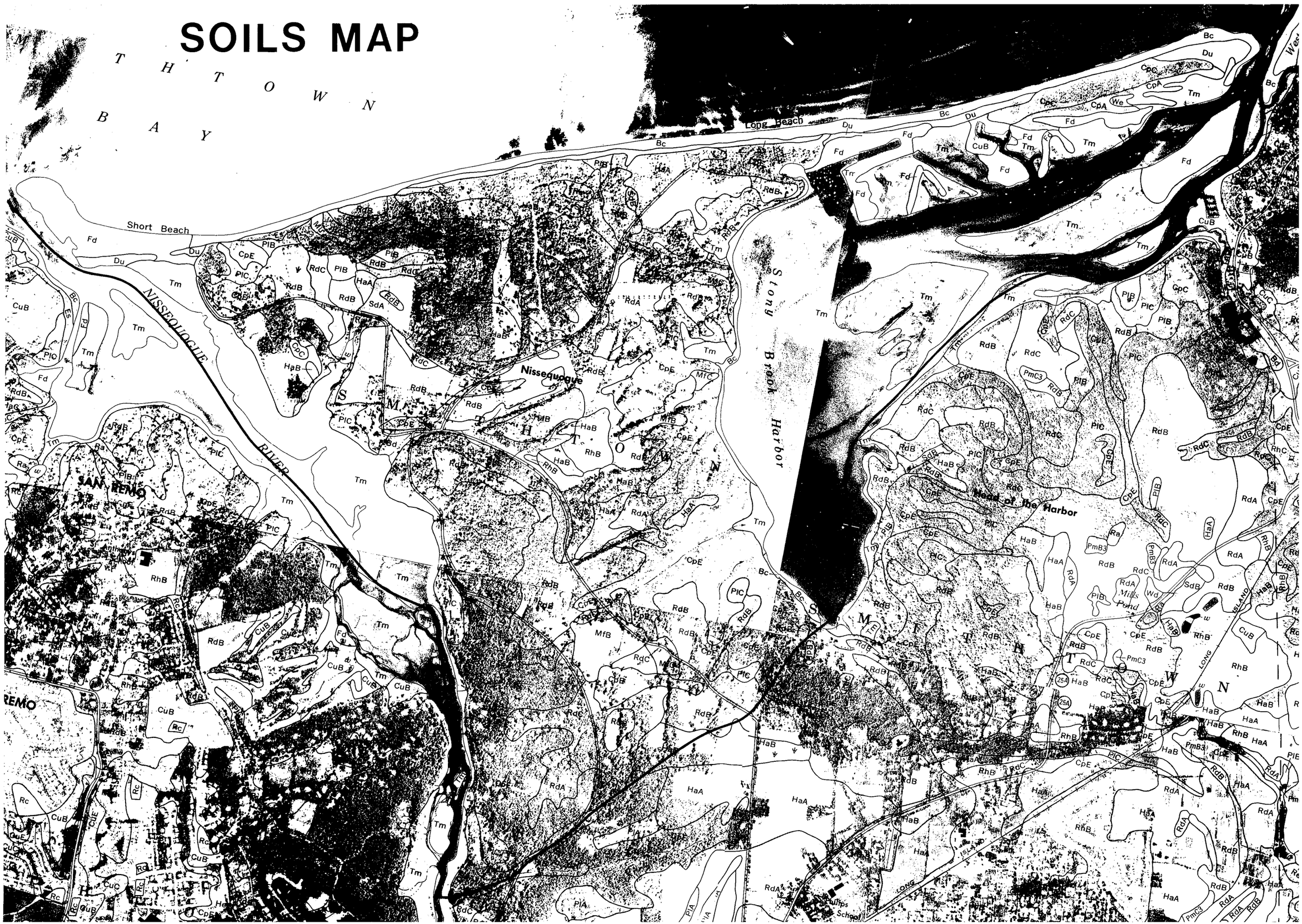
927.1A

VILLAGE OF NISSEQUOGUE

(UNDERWATER - LAND)

20.5A

SOILS MAP


MATTITUCK BAY
Long Beach
Short Beach
NISSEQUOGUE RIVER
Nissequogue
SAINT JAMES
Stony Brook Harbor
Head of the Harbor
Mills Pond
SAN REMO
Bc
Du
Fd
Tm
CuB
CpC
CpA
We
CpE
PlB
PlC
RdB
RdC
RdA
HaB
HaA
SdA
SdB
MfB
MfC
RhB
RhC
Ra
Rc
Es
PmB3
Pmc3
Wd
25A
LONG ISLAND